gases in war and the massacre of women and children. We would rather suggest that musical art possesses an element of *permanence* which is not to be found in the other arts. The collection of masterpieces which the present generation has inherited from the classical composers is so large that a modern composer, working on the same lines, would find it next to impossible to assert his influence. Consequently, musicians have had to seek fresh fields and pastures new by tearing up the "scraps of paper" which their predecessors regarded as binding.

OUR BOOKSHELF.

Surface Tension and Surface Energy and Their Influence on Chemical Phenomena. By Dr. R. S. Willows and E. Hatschek. Pp. viii + 80. (London: J. and A. Churchill, 1915.) Price 2*s*. 6*d*. net.

THE appearance of this book, following close on that of a similar work by Michaelis, is a welcome sign of the increasing interest now taken in this subject. The distribution of matter and energy at any interface, although of the first importance, has only come into prominence since the development of colloid chemistry.

The scope and character of the book may be indicated by a reference to the chief subjects discussed. They are:—the fundamental ideas of surface tension; intrinsic pressure; Gibbs's surface excess formula; recent experimental work on interfacial concentrations; electrical phenomena at interfaces, with special attention to the Lippmann electrometer and the dropping electrode; and, in conclusion, such matters as condensation on gas ions, effect of electrification on the vapour pressure of drops, and "waterfall electricity."

It is scarcely surprising that the authors have found it no easy task to co-ordinate these varied subjects; and to this difficulty is doubtless due a want of clearness in a few places. There is one notable omission; one would have expected to find the development of the surface excess equation, either as given by Gibbs himself, or by Thomson or Milner. Curiously, no mention is made of Milner's experimental work, the first attempt to test the formula.

In spite of these defects, the work must prove helpful to advanced students and research workers, biological and technical, who have a practical interest in adsorption and allied phenomena. There is a useful index, but it seems a pity that no references to original papers are given.

W. W. T.

Fire Tests with Glass. "Red Books," Nos. 196 and 197. (London: British Fire Prevention Committee.) Price 2*s*. 6*d*. each.

THESE two small books embody the British Fire Prevention Committee's Report on Fire Tests made respectively with skylight openings and windows filled in with "wired glass" manufactured in our own country. The skylights were five in number, each 2 ft. square, and arranged horizontally in a single straight row. The glazing was subjected to fire for an hour, followed by water from a steam fire-engine applied at close range for two minutes on the fire side. No fire passed through the glazing, but more or less water found its way through three of the five. Details of the tests are given, with illustrations showing the effects of the fire. The three vertical windows were subjected to a precisely similar test with much the same results. In the case of two of the windows neither fire nor water passed through the glazing, but in the third, though no fire passed through, the application of water caused perforation and some water got through. The temperatures reached before the application of water were not less than 1500° F. (or 815·5° C.). The maximum size of the vertical glazing tested was four feet by one foot.

The results of the tests clearly indicate that British wired glazing, when suitably fixed, can effectually check the spread of fire in a manner comparable with fire-resisting partitions and doors of much greater thickness and weight. The subject is well worth the serious attention of those interested in the limitation of damage by fire, especially in cases where the admission of light is desirable.

J. A. A.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

The Okapi.

IN my letter published in NATURE of May 27 (vol. xcv., p. 342) dealing mainly with the "Supposed Horn-Sheaths of an Okapi," I stated that "it is only when extremely young that the backward slope of the back is very noticeable." It is perhaps the only statement I have made regarding the okapi which was not based on my own observations, and it appears to be erroneous. The impression was derived from a photograph reproduced in M. Fraipont's "Monograph on the Okapi," of a very young one captured by natives and brought into one of the Uele stations. I have since seen a photograph of the same animal from another source which shows that there was very little backward slope. At maturity the height of the okapi at the shoulders is only 2 to 3 in. at the most more than that above the hindquarters. The following measurements taken from three animals lying as they fell, one by Mr. A. E. H. Reid, and two by myself, bring this out quite clearly:—

	Young male (No. 507)		Old female (No. 686)		Old male (Reid's) (No. 717)	
	ft.	in.	ft.	in.	ft.	in.
Nose to tip of tail (without hair)	6	1½	8	2	7	11
Tail (without hair)	0	14	0	14	0	14
Height at shoulder	4	4¼	5	1½	4	11½
Height above hind quarters	4	2	4	11½	4	9
Excess of height at the shoulders	0	2¼	0	2	0	2½

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Mr. Reid has given me the following additional measurements for his specimen:—Girth of neck in front of shoulders 2 ft. 11½ in., and girth of chest behind shoulders 5 ft. 7 in.

The okapi has no "hump" at the withers, as might be supposed by the length of the spinous processes of the dorsal vertebræ and as represented in many mounted specimens. The back is as straight as that of any horse or antelope. The neck is deep at the base and tapers to comparatively small dimensions immediately behind the head without any curve. The body is rotund, and the limbs remarkably clean and sleek. The animal as I have seen it has distinctly graceful proportions, and does not give one the impression of being all angles as in the giraffe. When standing on the alert it holds the neck fairly high, slightly above the line of the back, with the head poised at an angle, and the ears well forward.

The animal is probably a surviving primitive form of a family closely allied to the ancestors of the giraffes, which, as the forest once covering all tropical and probably most of subtropical Africa gradually disappeared by the agency of man, have become modified, bulkier animals under the influence of sunlight and freedom in the open scrub country, where to browse on the young shoots of the thorny acacia trees, grown tall and table-topped owing to annually recurring grass fires, has necessitated the development of a longer neck.

The giraffe, now restricted to Africa, at one time, during the latter portion of the Tertiary period, I think, roamed far and wide over southern Europe and throughout a large extent of Asia. Similarly the okapi's area of distribution before the destruction of the forest was probably much wider than at present. There is, in fact, evidence that it inhabited the once forest-covered regions of the Upper Nile Valley. It was pointed out in 1902 that among the twelfth-dynasty paintings from Beni-Hasan, Egypt, there exists a picture, long known to archæologists, which portrays a creature termed "Sche," said to have a resemblance to the present-day okapi, except that the upper lip is somewhat protruded and proboscis-like, and there are no zebra-like markings, the body and limbs being of a uniformly reddish colour. It is possible that this picture represents a form of the okapi known to the ancient Egyptians. C. Christy.

July 5.

Testing Respirators.

The chief difficulty in the determination of the relative efficiency of these safeguards which are so freely offered to the public, and also utilised for the purposes of war, is the want of a standard method of testing the same.

As the result of a few preliminary experiments, I would suggest in the testing of different fabrics impregnated with chemical substances that the conditions of working must be standardised, and the following conditions met. A suitable container for the mixture of air and the poisonous gas is required, and this must lead directly to the surface of the fabric which is exposed to the action of the mixed gases as they pass through its substance.

The rate of flow of the gas through the cloth must slightly exceed that of the inflow of air under actual breathing conditions, and this must be standardised. The reduction in the amount of the added gas is observed by actual analysis, and the test only made after the air has been passing for a stated period, which must not be less than five minutes. The composition of the air being tested must correspond with that likely to be met with in practice. In the case of chlorine the reduction in the amount present in the air passing the treated screen can be easily observed by actual estimation. As so much depends upon the amount of moisture present on the screen, this should be also standardised. It may be contained in the gas as it passes the screen, which must be of constant area.

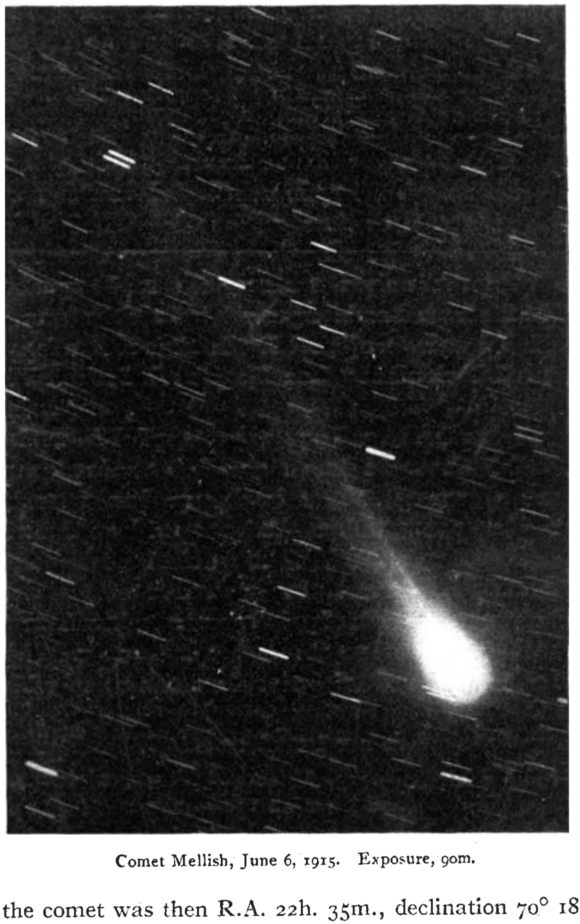
It is only possible by such means to study the effect of varying moisture on the rate of absorption, etc., and to set up standard conditions which will enable comparative results to be obtained.

I hope soon to be able to suggest what these standard conditions should be, and the best type of apparatus necessary to carry out comparative experiments. W. P. Dreaper.

London, E.C., July 5.

Photograph of Mellish's Comet.

I enclose herewith a contact print from a negative of comet Mellish obtained with the Franklin Adams star camera of the Union Observatory on June 6, 1915, with an exposure of ninety minutes. The position of the comet was then R.A. 22h. 35m., declination 70° 18′ south.



Comet Mellish, June 6, 1915. Exposure, 90m.

The proximity of the comet to the pole is well shown, even over the small region of the photograph, by the change in the direction of the star trails.

H. E. Wood
(Chief Assistant).

Union Observatory, Johannesburg, June 10.

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